Serial Number: 09/993,333 Filing Date: November 14, 2001

Title: REDUCTION OF ANTIOXIDANT ENZYME LEVELS IN TUMOR CELLS USING ANTISENSE OLIGONUCLEOTIDES

IN THE CLAIMS

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The claims are as follows:

- (Cancelled) 1.
- 2. (Previously Presented) The oligonucleotide of claim 6 or 7, wherein the antisense nucleic acid is about 20 nucleotides in length.
- 3. (Previously Presented) The oligonucleotide of claim 6 or 7, wherein the antisense nucleic acid sequence is phosphorothiolated.
- (Cancelled) 4.
- 5. (Withdrawn) The oligonucleotide of claim 6 or 7, wherein the antioxidant enzyme is catalase or phospholipid glutathione peroxidase.
- 6. (Previously Presented) An oligonucleotide comprising an antisense nucleic acid sequence that is about 18 to 26 nucleotides in length, is at least 90% complementary to and binds specifically to a contiguous portion of a nucleic acid that encodes a human manganese superoxide dismutase; wherein the contiguous portion includes the start codon of the nucleic acid encoding the manganese superoxide dismutase.
- 7. (Previously Presented) An oligonucleotide comprising an antisense nucleic acid sequence that is about 18 to 26 nucleotides in length, is 100% complementary to and binds specifically to a contiguous portion of a nucleic acid that encodes a human manganese superoxide dismutase; wherein the contiguous portion includes the start codon of the nucleic acid encoding the manganese superoxide dismutase.
- 8. (Previously Presented) A method of treating a tumor in a mammal comprising reducing antioxidant enzyme levels in a cell of a tumor by administering to a mammal having the tumor a

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therapeutically effective amount of an antisense nucleic acid sequence that is about 18 to 26 nucleotides in length, is at least 90% complementary to and binds specifically to a contiguous portion of a nucleic acid that encodes a human manganese superoxide dismutase, and wherein the contiguous portion includes the start codon of the nucleic acid encoding the human manganese superoxide dismutase.

- 9-10. (Cancelled)
- 11. (Previously Presented) The method of claim 8, wherein the therapeutic agent is injected into the tumor.
- 12. (Original) The method of claim 8, wherein the mammal is a human.
- 13. (Original) The method of claim 8, wherein the therapeutic agent further comprises a delivery vehicle.
- 14. (Original) The method of claim 13, wherein the delivery vehicle is lipofectamine or -[1-(2,3-dioleoyloxy)propyl]-*N*, *N*, *N*-trimethylammonium methyl sulfate ("DOTAP").
- 15. (Previously Presented) The method of claim 8, wherein the antisense nucleic acid sequence is phosphorothiolated.
- 16-17. (Cancelled)
- 18. (Previously Presented) The method of claim 8, wherein the antisense nucleic acid sequence is 90% complementary to the contiguous portion of the nucleic acid that encodes a human manganese superoxide dismutase.
- 19. (Previously Presented) The method of claim 8, wherein the antisense nucleic acid

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sequence is 100% complementary to the contiguous portion of the nucleic acid that encodes a human manganese superoxide dismutase.

- 20. (Previously Presented) An oligonucleotide comprising an antisense nucleic acid sequence that specifically binds to a nucleic acid encoding an antioxidant enzyme start codon, wherein the sequence is SEQ ID NO:2.
- 21. (Previously Presented) The oligonucleotide of claim 20, wherein the antisense nucleic acid sequence is phosphorothiolated.
- 22. (Cancelled)
- 23. (Withdrawn) The oligonucleotide of claim 6 or 7, wherein the antioxidant enzyme is copper and zinc superoxide dismutase.
- 24. (Withdrawn) The oligonucleotide of claim 6 or 7, wherein the antioxidant enzyme is catalase.
- 25. (Withdrawn) The oligonucleotide of claim 6 or 7, wherein the antioxidant enzyme is phospholipid glutathione peroxidase.
- 26. (Withdrawn) The oligonucleotide of claim 6 or 7, wherein the antioxidant enzyme is cytosolic glutathione peroxidase.
- 27. (Previously Presented) The method of claim 8, wherein the tumor is breast cancer.
- 28. (Previously Presented) The method of claim 8, wherein the tumor is glioma.
- 29. (Previously Presented) The method of claim 8, wherein the tumor is melanoma.

RESPONSE TO RESTRICTION REQUIREMENT

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30. (Previously Presented) The oligonucleotide of claim 6, which is 18 to 26 nucleotides in length and is at least 90 % identical to SEQ ID NO: 2.

31. (Previously Presented) The oligonucleotide of claim 6, the sequence of which consists of SEQ ID NO: 2.